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To: Examiner Karsnic
From: Brian Leggett 206-407-1542
Re: App. Ser. No. 10/790,234

Examiner, see attached for draft examiner amendments.

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Draft Proposed Examiner Amendments

10/790,234

1. (Currently Amended) A method, comprising:
encoding, by a computing system, each of a collection of coefficients of source data according to a global coding order and an overall target bit rate;
calculating, by the computing system, for a current one of a plurality of coding units of a particular one of the collections of coefficients, an adaptive threshold,
wherein said calculating comprises determining a fractional number,
wherein said fractional number comprises a denominator derived from at least a relationship between the overall target bit rate and a total amount of bits used to encode previously-encoded coding units of the source data according to at least the global coding order, and
wherein said fractional number comprises a numerator equal to an amount of distortion that would be caused by terminating said encoding of the particular one of the collections of coefficients at the current coding unit or by terminating said encoding of the particular one of the collections of coefficients at a neighboring coding unit of the current coding unit; and
terminating, by the computing system, said encoding of the particular one of the collections of coefficients upon determining that a rate-distortion value of the current one of the plurality of coding units is less than the calculated adaptive threshold of the current coding unit.
2. (Previously Presented) The method of claim 1, wherein the collections of coefficients of the source data are code-blocks.
3. (Currently Amended) The method of claim 1, further comprising calculating, by the computing system, the rate-distortion value, wherein the rate-distortion value comprises a rate value and a distortion value, wherein the rate value comprises an amount of bits to encode the current coding unit, or a first neighboring coding unit according to a local

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coding order of the particular collection of coefficients, and wherein the distortion value comprises a distortion reduction due to an including of the coding unit in the output code-stream, or a distortion reduction due to an including of a second neighboring coding unit according to the local coding order of the collection of coefficients.

4. (Canceled)

5. (Previously Presented) The method of claim [[4]]3, wherein the rate-distortion value is a fractional number, wherein another denominator of the fractional number comprises the rate value, and wherein another numerator of the fraction number comprises the distortion value.

6. (Canceled)

7. (Previously Presented) The method of claim [[4]]1, further comprising terminating, by the computing system, said encoding of the particular collection of coefficients upon determining that another rate-distortion value of another coding unit of the particular collection of coefficients is less than the calculated adaptive threshold of the current coding unit .

8. (Canceled)

9. (Currently Amended) The method of claim 1, wherein said calculating of the adaptive threshold comprises calculating a product of the fractional number and a weighting factor.

10. (Previously Presented) The method of claim 1, wherein the collections of coefficients comprise code-blocks of coefficients of the source data in a data transform domain.

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11. (Previously Presented) The method of claim 1, wherein the collections of coefficients comprise code-blocks of coefficients in a data transform domain, and each coding unit comprises an intermediate coding pass.

12. (Previously Presented) The method of claim 11, wherein the data transform domain is a discrete wavelet domain in accordance with JPEG2000 and the intermediate coding passes of one or more of the coding units are one of a significance pass, a refinement pass, or a cleanup pass in accordance with JPEG2000.

13. (Previously Presented) The method of claim 1, wherein the global coding order is predefined.

14. (Previously Presented) The method of claim 1, wherein the collections of coefficients comprise code-blocks of coefficients in a data transform domain of data comprising a difference of the source data and another source data.

15-23 (Canceled)

24. (Canceled)

25-27 (Canceled)

28. (Canceled)

29. (Previously Presented) The article of manufacture of claim 92, wherein said collections of coefficients of the source data are code-blocks.

30. (Previously Presented) The article of manufacture of claim 92, wherein the method further comprises calculating the rate-distortion value, wherein the rate-distortion value comprises a rate value and a distortion value, wherein the rate value comprises an

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amount of bits to encode the current coding unit, or a first neighboring coding unit of the current unit according to the coding order, of the collection of coefficients, and wherein the distortion value comprises either a distortion reduction due to an encoding of the particular coding unit of the particular collection of coefficients, or a distortion reduction due to an encoding of a second neighboring coding unit according to the second coding order of the collection of coefficients.

31. (Canceled)

32. (Previously Presented) The article of manufacture of claim 92, wherein the rate-distortion value is a fractional number, wherein another denominator of the fractional number comprises the rate value, and wherein another numerator of the fractional number comprises the distortion value.

33. (Canceled)

34. (Previously Presented) The article of manufacture of claim 92, wherein the method further comprises terminating the particular collection of coefficients upon determining that another rate-distortion value of another coding unit of the particular collection of coefficients is less than the calculated adaptive threshold value of the current coding unit.

35. (Canceled)

36. (Previously Presented) The article of manufacture according to claim 92, wherein said calculating of the adaptive threshold comprises calculating a product of the fractional and a weighting factor.

37. (Previously Presented) The article of manufacture of claim 92, wherein the collections of coefficients comprise code-blocks of coefficients of the source data in a data

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transform domain.

38. (Previously Presented) The article of manufacture of claim 92, wherein the collections of coefficients comprise code-blocks of coefficients in a data transform domain, and wherein the current coding unit is an intermediate coding pass.

39. (Previously Presented) The article of manufacture of claim 38, wherein the data transform domain is a discrete wavelet domain and wherein the intermediate coding pass is a significance pass, a refinement pass or a cleanup pass.

40. (Previously Presented) The article of manufacture of claim 92, wherein the collections of coefficients comprise code-blocks of coefficients in a data transform domain, and wherein the coding order is predefined.

41. (Previously Presented) The article of manufacture of claim 92, wherein the collections of coefficients comprise code-blocks of coefficients in a data transform domain of data comprising a difference of a first source data and a second source data.

42-54 (Canceled)

55. (Canceled)

56. (Currently Amended) The apparatus as claimed in claim 93, wherein said collections of coefficients of the source data comprise code-blocks.

57. (Currently Amended) The apparatus as claimed in claim 93, wherein the rate-distortion value comprises a rate value and a distortion value, wherein the rate value comprises an amount of bits to encode the current coding unit, or a first neighboring coding unit, according to the coding order, and wherein the distortion value comprises a measure of distortion reduction due to the current coding unit of the collection of coefficients, or a

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measure of distortion reduction due to a second neighboring coding unit of the current coding unit.

58-68. (Canceled)

69-77 (Canceled)

78. (Canceled)

79-81 (Canceled)

82 – 91 (Cancelled)

92. (Currently Amended) An article of manufacture including a computer-readable medium having instructions stored thereon that, if executed by a computing device, cause the computing device to perform a method comprising:

encoding each of a collections of coefficient of source data according to a coding order and an overall target bit rate;

calculating for a current one of a plurality of coding units of a particular one of the collections of coefficients, an adaptive threshold,

wherein said calculating comprises determining a fractional number, wherein said fractional number comprises a denominator derived from at least a relationship between the overall target bit rate and a total amount of bits used to encode all previously-encoded coding units of the source data according to at least the coding order, and

wherein said fractional number comprises a numerator equal to an amount of distortion that would be caused by terminating said encoding of the particular one of the collections of coefficients at the current coding unit or by terminating said encoding of the particular one of the collections of coefficients at a neighboring coding unit of the current coding unit; and

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terminating said encoding of the particular one of the collections of coefficients upon determining that a rate-distortion value of the current one of the plurality of coding units is less than the calculated adaptive threshold of the current coding unit.

93. (Currently Amended) An apparatus, comprising:

- means for encoding each of a collection of coefficients of source data, in turn, according to a coding order and an overall target bit rate;
- means for calculating for a current one of a plurality of coding units of a particular one of the collections of coefficients, an adaptive threshold,
 - wherein the adaptive threshold comprises a fractional number, wherein said fractional number comprises a denominator derived from at least a relationship between the overall target bit rate and a total amount of bits used to encode all previously-encoded coding units of the source data according to at least the coding order, and
 - wherein said fractional number comprises a numerator equal to an amount of distortion that would be caused by terminating said encoding of the particular one of the collections of coefficients at the current coding unit or by terminating said encoding of the particular one of the collections of coefficients at a neighboring coding unit of the current coding unit; and
- means for terminating encoding of the particular one of the collections of coefficients upon determining that a rate-distortion value of the current one of the plurality of coding units is less than the calculated adaptive threshold of the current coding unit.